

A2 --19. A mobile communication system supporting communication of data and comprising at least one base station connected to a switching arrangement over a connection and using a communication protocol for communication between a mobile station and the switching arrangement, wherein:

(a) the connection between the base station and the switching arrangement supporting packet switched non-transparent communication of data transported as data frames;

(b) the base station includes

means for detecting if data frames sent from the mobile station are correctly received over the air interface, and

means for sending only data frames detected as correctly received on to the switching arrangement using the packet switched connection between the base station and the switching arrangement.

20. The system of claim 19, wherein the non-transparent communication of data transported as data frames is established on the uplink from the mobile station.

21. The system of claim 20, wherein the means for detecting comprising means for calculating a frame checksum for a received data frame.

22. The system of claim 21, wherein the quality of the radio transmission is detected in the base station to detect if a data frame is correctly received.

23. The system of claim 19, wherein the switching arrangement comprises a Mobile Switching Center.

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24. The system of claim 19, wherein:

the switching arrangement comprises a Base Station Controller;
the base station comprises a Base Transceiver Station; and
packet switched communication of data is supported at least on the uplink between
the Base Transceiver Station and the Base Station Controller.

25. The system of claim 24, wherein:

the Base Station Controller includes transcoding and adapting means for
communication with an interworking function of a mobile switching center which comprises
means for building frames for transportation of data; and
the transcoding and adapting means detects if frames received from the mobile
switching center contain data and sending only data frames on to the base station.

26. The system of claim 19, wherein the packet switched communication of data is
supported between the base station and the switching arrangement on the downlink.

27. A mobile communication system supporting communication of packet data and
comprising at least one base station connected to a switching arrangement over a connection
and using a communication protocol for communication between the mobile station and the
switching arrangement, wherein:

the connection between the base station and the switching arrangement supports
packet switched non-transparent communication of data as data frames;

the base station includes:

means for detecting if data frames sent from the mobile station are correctly
received over the air interface, and

means for sending only data frames detected as correctly received on to the
switching arrangement using the packet switched connection between the base station and the
switching arrangement.

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28. The system of claim 27, wherein the packet switched communication is supported on the downlink from the switching arrangement to the base station.

29. A method of transmitting data in a mobile communication system, the method comprising the steps of:

establishing a non-transparent data connection between a mobile station and a switching arrangement, comprising an air interface between the mobile station and a base station and a packet switched connection between the base station and the switching arrangement;

detecting in the base station if data frames sent from the mobile station are correctly received over the air interface; and

sending only data frames detected as correctly received on to the switching arrangement using the packet switched connection between the base station and the switching arrangement.

30. The method of claim 29, wherein the step of detecting comprises using a frame checksum defined in the non-transparent data protocol to establish if the data frames are correctly received.

31. The method of claim 29, further comprising the step of:

performing radio quality measurements in the base station to establish if data frames are correctly received over the air interface from the mobile station.

32. The method of claim 30, further comprising the step of:

detecting in the base station if a received time slot from the mobile station is symmetrical, and, only if the time slot is symmetrical, sending data packets over the packet switched connection to the switching arrangement.

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33. The method of claim 29, further comprising the step of:
implementing packet switched transmission on the downlink from the switching
arrangement to the base station.

34. A method of transmitting data in a mobile communication system supporting
communication of packet data, the method comprising the steps of:

establishing a non-transparent data connection between a mobile station and a
switching arrangement, comprising an air interface between the mobile station and a base
station and a packet switched connection between the base station and the switching
arrangement;

detecting in the base station if data frames sent from the mobile station are correctly
received over the air interface; and

sending only data frames detected as correctly received on to the switching
arrangement using the packet switched connection between the base station and the
switching arrangement.

35. The method of claim 34, wherein the step of detecting comprises using a frame
checksum, defined in the non-transparent data protocol, to establish if the data frames are
correctly received.

36. The method of claim 35, further comprising the step of:
implementing packet switched transmission on the downlink from the switching
arrangement to the base station.--

IN THE ABSTRACT

Please delete the Abstract and insert the new Abstract attached as a separate sheet.